AMENDMENTS TO THE CLAIMS:

Please amend claims as indicated in the attached listing of claims. This listing replaces all prior listing of claims.

1.   (Currently amended) A method for dynamically establishing an ad-hoc network including a plurality of machines, one or more of which may move within an environment and each of which includes a gateway, the method performed by a respective gateway included within a respective one of the machines comprising:

determining a first set of the plurality of machines that are within direct communication range of the respective machine based on the respective machine's current location within the environment;

determining a second set of the plurality of machines that are in direct communication range of one or more of the machines in the first set;

forwarding a packet received from a first machine included in the first set to a second machine included in the first set based on a determination that the second machine is either directly or indirectly within communication range of a third machine included the second set; and

updating a computer-readable storage device of the machines included in at least one of the first and second sets of the plurality of machines based on at least one of (i) the respective machine changing locations within the environment and (ii) any of the machines included in the first or second sets changing locations within the environment.

2. (Previously presented) The method of claim 1, wherein the packet is destined for a destination machine not included in the first or second sets of the plurality of machines, and forwarding the packet includes:

forwarding the packet to the second machine based on a determination that the third machine is in direct communication range of the destination machine.

3. (Previously presented) The method of claim 1, wherein the packet is destined for a destination machine not included in the first or second sets of the plurality of machines, and forwarding the packet includes:

forwarding the packet to the second machine based on a determination that the third machine can indirectly communicate with the destination machine.

4. (Previously presented) The method of claim 1, wherein determining the first set of the plurality of machines includes:

broadcasting an admission packet;

receiving a response from at least one of the first and second machines; and

adding at least one of the first and second machines to the first set of the plurality of machines based on the received response.

5. (Previously presented) The method of claim 4, wherein determining the second set of the plurality of machines includes:

collecting, from the response, an identifier associated with the third machine; and

adding the third machine to the second set of the plurality of machines, wherein the identifier reflects that at least one of the first and second machines are either directly or indirectly in communication with the third machine.

6.   (Previously presented) The method of claim 1, wherein updating the machines included in the at least one of the first and second sets of the plurality of machines further includes:

determining that the respective machine has moved to a first location; and

repeating the determining of the first set of the plurality of machines when the first location is beyond a certain distance from the current location.

7.   (Previously presented) The method of claim 1, wherein updating the machines included in the at least one of the first and second sets of the plurality of machines further includes:

periodically repeating the step of determining the first set of the plurality of machines.

8.   (Previously presented) The method of claim 1, wherein updating the machines included in the at least one of the first and second sets of the plurality of machines further includes:

removing from the first set any machines that are not in direct communication with the respective machine.

9.   (Previously presented) The method of claim 8, wherein updating the machines included in the at least one of the first and second sets of the plurality of machines further includes:

removing from the second set any machines that are not in direct communications with any machines included in the first set.

10.   (Previously presented) The method of claim 1, wherein the respective machine is connected to at least two data links capable of transmitting the packet from the respective machine and forwarding the packet further includes:

selecting one of the at least two data links to forward the packet to the first machine based on at least one of an availability status of each of the data links, a cost of communicating over each data link, a quality of service associated with each data link, a priority of the packet, and a transmission time associated with each data link.

11.   (Previously presented) The method of claim 1, wherein the packet is destined for a destination machine and the respective gateway includes a first network table, and forwarding the packet includes:

forwarding the packet to the second machine based on a determination that the second machine is associated with the destination machine in the first network table.

12.   (Previously presented) The method of claim 1, wherein the packet is destined for a destination machine and the respective gateway includes a first and second network table, and forwarding the packet includes:

forwarding the packet to the second machine based on a determination that the destination machine is associated with the third machine in the second network table and the third machine is associated with the second machine in the first network table.

13.   (Currently amended) A system for dynamically establishing communications between a plurality of machines, one or more of which may move within an environment, the system comprising:

a first machine positioned in a first location within the environment;

a first gateway included in the first machine that connects an on-board data link with an off-board data link; and

a network table included in the first gateway that identifies machines that are either directly or indirectly within communication range of the first machine, wherein the network table identifies a first set of the plurality of machines that are within communication range of the first machine and identifies a second set of the plurality of machines that are within communication range of any of the machines in the first set,

wherein the first gateway is configured to:

update the network table based on at least one of (i) the first machine changing locations within the environment and (ii) any of the machines included in the first or second sets changing locations within the environment,

receive a packet over the off-board data link from a second machine included in the first set, wherein the packet identifies a destination machine,

forward the received packet to a third machine included in the first set based on a determination that the destination machine is associated with the third machine in the network table, and

send information included in the received packet to the on-board data link when the packet identifies the first machine as the destination machine.

14.   (Previously presented) The system of claim 13, wherein the first gateway is configured to update the machines included in the at least one of the first and second sets of the plurality of machines identified in the network table based on at least one of (i) the first machine moving out of communication range of any machine in the first set, (ii) any one of the machines included in the first set moving out of communication range of the first machine, (iii) any one of the machines in the first set moving out of communication range of any one of the machines in the second set, and (iv) any of the machines in the second set moving out of communication range of any one of the machines in the first set.

15.   (Previously presented) The system of claim 13, wherein the network table includes a first level table identifying the first and second set of the plurality of machines and a second level table identifying a third set of the plurality of machines that are within communication range of any of the machines in the second set, and wherein the first gateway is further configured to:

forward the packet to the third machine based on a determination that the destination machine is associated with a fourth machine included in the third set and the third machine is associated with the fourth machine in the second level table.

16.   (Previously presented) The system of claim 13, wherein the first gateway is further configured to:

broadcast an admission packet;

receive a response from at least one of the second and third machines;

and

add at least one of the second and third machines to the first set of the plurality of machines based on the received response.

17. (Previously presented) The system of claim 13, wherein the first gateway is further configured to:

periodically broadcast an admission packet to determine whether the first machine is within communication range of any of the machines in the environment.

18. (Previously presented) The system of claim 17, wherein the first gateway is further configured to:

remove a machine from the first set when the first machine can no longer directly communicate with that machine.

19. (Previously presented) The system of claim 17, wherein the first gateway is further configured to:

remove a machine from the second set when the machine can no longer directly or indirectly communicate with the destination machine.

20. (Previously presented) The system of claim 13, wherein the first machine is connected to at least two data links capable of transmitting the packet from the first machine and the first gateway is further configured to:

select one of the at least two data links to forward the packet to the third machine based on at least one of an availability status of each of the data links, a cost of communicating over each data link, a quality of service associated with each data link, a priority of the packet, and a transmission time associated with each data link.

21.	(Previously presented) The system of claim 13, wherein the first gateway is further configured to:

translate the information included in the received packet to a format compatible with the on-board data link when the packet identifies the first machine as the destination machine.

22.	(Previously presented) The system of claim 13, wherein the third machine includes a respective gateway that is configured to check a respective network table to identify a fourth machine that is either directly or indirectly in communication with the destination machine and forward the packet received from the first machine to the fourth machine.

23.	(Previously presented) The system of claim 13, wherein the first gateway is configured to:

trace the network table to determine the association between the third machine and the destination machine.

24.	(Previously presented) The system of claim 23, wherein the association between the third machine and destination machine includes an intermediate machine that is in direct communication with the third and destination machines.

25.	(Currently amended) A gateway included in a first machine located in an environment comprising one or more other machines, each machine capable of moving within the environment, the gateway comprising:

a first interface connected to an on-board data link interconnecting one or more on-board modules; and

a second interface connected to one or more off-board data links each capable of being communicatively connected to any of the other machines,

wherein the gateway includes:

means for sending an admission packet over one of the off-board data links, the admission packet including a first identifier associated with the first machine,

means for determining whether a response to the admission packet is received,

means for updating a network table based on the determination, wherein the network table includes a second identifier associated with a second machine that is in communication range of the first machine, a third identifier associated with a third machine in communication range of the first machine, and a fourth identifier associated with a fourth machine that is in communication range of the third machine, and

means for forwarding a packet received from the second machine to the third machine based on a determination that the fourth machine is identified in the network table.

26.   (Currently amended) A computer-readable storage device including instructions for performing, when executed by a processor, a method for dynamically establishing an ad-hoc network including a plurality of machines, one or more of which move within a<u>n</u> environment and each of which includes a gateway, the

method performed by a respective gateway included within a respective one of the machines comprising:

determining a first set of the plurality of machines that are within direct communication range of the respective machine based on the respective machine's current location within the environment;

determining a second set of the plurality of machines that are in direct communication range of one or more of the machines in the first set;

forwarding a packet received from a first machine included in the first set to a second machine included in the first set based on a determination that the second machine is either directly or indirectly within communication range of a third machine included the second set; and

updating the machines included in at least one of the first and second sets of the plurality of machines based on at least one of (i) the respective machine changing locations within the environment and (ii) any of the machines included in the first or second sets changing locations within the environment.

27.   (Currently amended) The computer-readable storage device medium of claim 26, wherein the packet is destined for a destination machine not included in the first or second sets of the plurality of machines, and forwarding the packet includes:

forwarding the packet to the second machine based on a determination that the third machine is in direct communication range of the destination machine.

28.   (Currently amended) The computer-readable storage device medium of claim 26, wherein the packet is destined for a destination machine not

-11-

included in the first or second sets of the plurality of machines, and forwarding the packet includes:

forwarding the packet to the second machine based on a determination that the third machine can indirectly communicate with the destination machine.

29.   (Currently amended) The computer-readable storage device medium of claim 26, wherein determining the first set of the plurality of machines includes:

broadcasting an admission packet;

receiving a response from at least one of the first and second machines; and

adding at least one of the first and second machines to the first set of the plurality of machines based on the received response.

30.   (Currently amended) The computer-readable storage device medium of claim 29, wherein determining the second set of the plurality of machines includes:

collecting, from the response, an identifier associated with the third machine; and

adding the third machine to the second set of the plurality of machines, wherein the identifier reflects that at least one of the first and second machines are either directly or indirectly in communication with the third machine.

31.   (Currently amended) The computer-readable storage device medium of claim 26, wherein updating the machines included in the at least one of the first and second sets of the plurality of machines further includes:

determining that the respective machine has moved to a first location; and

repeating the determining of the first set of the plurality of machines when the first location is beyond a certain distance from the respective machine's current location.

32.   (Currently amended) The computer-readable storage device medium of claim 26, wherein updating the machines included in the at least one of the first and second sets of the plurality of machines further includes:

periodically repeating the step of determining the first set of the plurality of machines.

33.   (Currently amended) The computer-readable storage device medium of claim 26, wherein updating the machines included in the at least one of the first and second sets of the plurality of machines further includes:

removing from the first set any machines that are not in direct communication with the respective machine.

34.   (Currently amended) The computer-readable storage device medium of claim 33, wherein updating the machines included in at least one of the first and second sets of the plurality of machines further includes:

removing from the second set any machines that are not in direct communications with any machines included in the first set.

-13-

35.   (Currently amended) The computer-readable storage device medium of claim 26, wherein the respective machine is connected to at least two data links capable of transmitting the packet from the respective machine and forwarding the packet further includes:

selecting one of the at least two data links to forward the packet to the first machine based on at least one of an availability status of each of the data links, a cost of communicating over each data link, a quality of service associated with each data link, a priority of the packet, and a transmission time associated with each data link.

36.   (Currently amended) The computer-readable storage device medium of claim 26, wherein the packet is destined for a destination machine and the respective gateway includes a first network table, and forwarding the packet includes:

forwarding the packet to the second machine based on a determination that the second machine is associated with the destination machine in the first network table.

37.   (Currently amended) The computer-readable storage device medium of claim 26, wherein the packet is destined for a destination machine and the respective gateway includes a first and second network table, and forwarding the packet includes:

forwarding the packet to the second machine based on a determination that the destination machine is associated with the third machine in the second network table and the third machine is associated with the second machine in the first network table.

-14-

38. (Currently amended) A method for dynamically establishing an ad-hoc network including a plurality of machines, one or more of which may move within an environment and each of which includes a gateway, the method performed by a respective gateway included within a respective one of the machines comprising:

determining a first set of the plurality of machines that are within direct communication range of the respective machine based on the respective machine's current location within the environment;

determining a second set of the plurality of machines that are in direct communication range of one or more of the machines in the first set; and

forwarding a packet to a computer-readable storage device of a second machine included in the first set based on a determination that the second machine is either directly or indirectly within communication range of a third machine included the second set, wherein the packet is either (i) received from a first machine included in the first set or (ii) generated within the respective machine,

wherein determining the first set, determining the second set, and forwarding are performed when the respective machine is prepared to forward the packet to another machine.